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NATURAL DISASTER REDUCTION: WARNING SYSTEMS

Technical session

Addendum

Dissemination of and response to community-based warnings

Summary of presentation by Mr. Toshiyuki Ono,
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1. The purpose of the presentation is to provide information on the dissemination of and response to warnings of natural hazards and to indicate current problems and directions for future developments.

2. In Japan, 71 meteorological observatories of the Japan Meteorological Agency (JMA) issue severe weather, storm surge, high waves and flood warnings, and five principal observatories and the headquarters issue tsunami warnings when serious disasters are expected. Each meteorological observatory disseminates warnings to organs dealing with disaster prevention, such as the corresponding prefectural government and police and the news media, using multi-destination facsimile, on-line systems etc. Each municipality receives the information from its prefectural government through a disaster-prevention radio communication system. Some prefectural governments use the local authorities satellite communication network for information transmission. Monitoring carefully meteorological, terrestrial and hydrological conditions, municipalities warn residents to prepare for possible disaster through various media, such as the disaster-prevention radio system, sound trucks and sirens. Mass media also play an important role in disseminating to the public information on disaster prevention and mitigation, although the municipalities have the formal responsibility for its dissemination.

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3. Warnings of tropical cyclones issued by the Bangladesh Meteorological Department are disseminated not only by various governmental authorities and the media - radio, television and press - but also by the Bangladesh Red Crescent Society. In a system well suited to local circumstances, the warnings are transmitted through a network of district and sub-district control offices. The Society's 20,000 volunteers alert people at the "grass-roots" level through megaphones and house-to-house contact.

4. To overcome the limitations of the conventional communication system, a dependable scheme for the dissemination of tropical cyclone warnings, the Disaster Warning System (DWS) has been installed in India. Under DWS, warnings are transmitted by the Indian national satellite to all stations of the network of about 100 ground receiving stations, in the threatened areas.

5. Heavy rain warnings are issued in Japan when precipitation amounts are likely to reach danger levels, which are predetermined for each of 191 areas. Disasters, however, often occur locally and the relationships between precipitation amounts and disasters are complex. Thus, to avoid missing events, warnings are apt to be issued so frequently that residents who have not previously suffered from damage tend to ignore warnings. So that effective use is made of severe weather warnings, it is important that public confidence in the information grows through the improvement of weather forecast accuracy. With regard to tsunami warnings, it is essential to reduce the relay time of the information flow between observatories and the public so as to disseminate warnings as promptly as possible. For prompt transmission, satellite communication systems should be expanded in the near future.

6. From studies of the tropical cyclone in Bangladesh in April 1991, investigators have concluded that one of the several factors contributing to the high death toll was the failure of some people to respond to the warnings owing to their belief that they were false alarms. While a degree of over-warning is unavoidable, every effort must be made to increase the accuracy of cyclone track and intensity forecasts, and hence warnings, and to strengthen public awareness and education campaigns.